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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,715

03/11/2005

Hac-Yong Choi

CHOI3029/JEK

9159

23364 7590 06/12/2007
BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314

EXAMINER

DO, ROBERT C

ART UNIT

PAPER NUMBER

2851

MAIL DATE

DELIVERY MODE

06/12/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/527,715

Applicant(s)

CHOI, HAE-YONG

Examiner

Robert C. Do

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2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 545/03 4/30/07
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 - 10 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 1 is objected to because of the following informalities: Claim 1 uses the term "refractivity" and the examiner believes this refers to the index of refraction, which would be a better term to use. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 and 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burke (US 6,064,521) in view of DiLoreto et al. (US 6,076,933).

Regarding Claim 1, Burke discloses a double-sided image film (Fig. 24) screen having a projection structure, comprising: a transparent material (455), a light-refracting material (The beads in the transparent bead layer 455), contained in or deposited on the transparent material (Fig. 24 shows beads contained in the layer), wherein the light refracting material has a refractivity (Claim 1 discloses that the bead layer has a

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different index of refraction than the beads) and a content and a particle size of the light-refracting material and a thickness of the film screen mutually interact such that an image projected from a single projector is dividedly displayed on front and rear surfaces of the film screen to enable simultaneous display of the image at the front and rear surfaces of the film screen. (Column 12, lines 21-23 discloses that an aspect of the invention is to produce an image that can be viewed from either side of the screen)

Burke does not disclose that, wherein the light refracting material has a refractivity of 1.4 or more.

However, Diloreto et al. discloses light-refracting material has a refractivity of 1.4 or more. (Column 5, lines 53-55 disclose light-refracting beads, 14, with indices of refraction of 1.5, 1.7, and 1.9)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the refracting material of Burke to have a refractivity of 1.4 or more as taught by Diloreto et al. for the purpose refracting the light to allow a even distribution of the image.

Regarding Claim 10, Burke discloses the film screen is divided into front (Fig. 12, 310) and rear (308) film sub-screens centering on a transparent plate (309) under the condition that the total thickness of the film screen, the content and the particle size of the light-refracting material in the film screen satisfy the allowable ranges.

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5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burke as modified by DiLoreto et al. as applied in Claim 1 above and further in view of Nezu (US 5,456,967)

Regarding Claim 2, the teachings of Burke as modified by DiLoreto have been discussed above. Burke further discloses the particle size of the light-refracting material in the range of 0.1 μ m to 50 μ m. (Claim 1 discloses the size of Burkes particles are between 300 nm – 1000 nm)

Burke does not disclose that the content of the light-refracting material in the film screen is in the range of 800ppm to 90,000ppm. However, it would have been obvious to one of ordinary skill at the time the invention was made to provide a specific range of content for the purpose of dispersing incident light distributing the brightness uniformly. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the range of the content of light-refracting material from 800ppm to 90,000ppm for the purpose of optimizing the distribution of light for better image quality, since it has been held that where the general conditions of a claim are disclosed are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Burke as modified by DiLoreto also does not disclose the thickness of the film screen is in the range of 10 μ m to 400 μ m.

However Nezu discloses a film screen that has a thickness of 10 μ m to 400 μ m. (The abstract discloses that the screen of Nezu is 35 to 200 μ m thick)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the screen of Burke as modified by DiLoreto range from 35 to 200 μm thick as taught by Nezu to allow the screen to be rolled up for ease of transportation.

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke and DiLoreto and Nezu further in view of Shopp (US 5,274,499).

Regarding Claims 3, Burke as modified by DiLoreto et al. and Nezu is discussed above.

Burke as modified by DiLoreto et al. and Nezu does not teach, a rotary rod is installed at an upper end of the film screen; and the film screen is rolled up into and down from the rotary rod, and serves as a rolled-type screen.

However, Shopp teaches, a rotary rod (Fig. 2, 34) is installed at an upper end of the film screen, and the film screen is rolled up into and down from the rotary rod, and serves as a rolled-type screen. (Column 1, lines 22-25)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the rotary rod of Shopp for the purpose of rolling the screen making it easy for transport. It also would have been obvious to one of ordinary skill in the art at the time the invention was made to fix a transparent plate to the film screen for the purpose of keeping the screen straight while moving upward and downward using the rotary rod.

Regarding Claims 4, Burke as modified by DiLoreto et al. and Nezu is teachings are discussed above.

Burke as modified by DiLoreto et al. and Nezu does not teach, the film screen is fixed to a transparent plate so that the film screen can be transferred upward and downward by means of a rotary rod.

However, Shopp teaches, the film screen is fixed to a transparent plate (Fig. 1, 23) so that the film screen can be transferred upward and downward by means of a rotary rod.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the rotary rod of Shopp for the purpose of rolling the screen making it easy for transport. It also would have been obvious to one of ordinary skill in the art at the time the invention was made to fix a transparent plate to the film screen for the purpose of keeping the screen straight while moving upward and downward using the rotary rod.

7. Claims 5 and 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burke and DiLoreto and Nezu further in view of Tanaka et al. (US 2003/0107803).

Regarding Claim 5, Burke as modified by DiLoreto et al. and Nezu is teachings are discussed above.

Burke as modified by DiLoreto et al. and Nezu does not teach, the film screen is attached to a glass window so that viewers at outdoor and indoor places can view the film screen through both surfaces thereof.

However, Tanaka et al. teaches, the film screen is attached to a glass window so that viewers at outdoor and indoor places can view the film screen through both surfaces thereof. (Paragraph [0030] and Fig. 1 and 2, show a windowpane of a building).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the window of Tanaka et al for the purpose of attaching the screen to a building to project the image for people outdoors to see.

Regarding Claim 7, Burke as modified by DiLoreto et al. and Nezu is teachings are discussed above.

Burke as modified by DiLoreto et al. and Nezu does not teach a reflection plane is formed on one surface of the film screen so that the film screen serves as a reflection-type screen without the generation of a hot spot.

However, Tanaka et al. teaches a reflection plane (Fig. 4, 2r) is formed on one surface of the film screen so that the film screen serves as a reflection-type screen without the generation of a hot spot. (Paragraph [0033]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add reflection plane of Tanaka et al for the purpose of eliminating hot spots so that the picture is uniformly bright in all areas.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burke and DiLoreto and Nezu further in view of Piepel et al. (US 2003/0163367).

Regarding Claim 6, Burke as modified by DiLoreto et al. and Nezu is teachings are discussed above.

Burke as modified by DiLoreto et al. and Nezu does not teach a projector is installed under the film screen and a reflecting mirror is installed in front of the projector to prepare one video system so that viewers can view an image displayed on the front and rear surfaces of the film screen.

However, Piepel et al. teaches a projector (Fig. 10, 153) is installed under the film screen and a reflecting mirror (152) is installed in front of the projector (153) to prepare one video system so that viewers can view an image displayed on the front and rear surfaces of the film screen. (When using the film screen as taught by Spector as modified by Murayama it can be displayed on the front and rear surfaces.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the projector and mirror of Piepel et al for the purpose of showing motion pictures on the screen while the mirror will allow the projector to be close to the screen allowing for a compact space that the unit will take up.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Do whose telephone number is (571)272-1387. The examiner can normally be reached on Monday Through Friday, 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCD



DIANE LEE
SUPERVISORY PATENT EXAMINER